Math 1330
Homework 15 (5.4)

Problem 5.4.10 refers to problem 10 in Chapter 5, Section 4 in the online text. Record your answers to all the problems in the EMCF titled "**Homework 15**."

1. Problem 5.4.10 a

A. $cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$ = the number in the interval $[-1, 0]$, whose cosine is $-\frac{\sqrt{3}}{2}$; $-\frac{\sqrt{3}}{2}$

B. $cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$ = the number in the interval $[0, 1]$, whose cosine is $-\frac{\sqrt{3}}{2}$; $\frac{\sqrt{3}}{2}$

C. $cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$ = the number in the interval $[-\pi, 0]$, whose cosine is $-\frac{\sqrt{3}}{2}$; $-\frac{5\pi}{6}$

D. $cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$ = the number in the interval $[0, \pi]$, whose cosine is $-\frac{\sqrt{3}}{2}$; $\frac{5\pi}{6}$

E. None of the above

2. Problem 5.4.16 b

A. π B. 0 C. $\frac{\pi}{2}$

D. $\frac{\pi}{4}$ E. $-\frac{\pi}{2}$ F. None of these

3. Problem 5.4.18 a

A. $-\frac{\pi}{4}$ B. $\frac{\pi}{4}$ C. Undefined

D. $\frac{3\pi}{4}$ E. $-\frac{\pi}{6}$ F. None of these

4. Problem 5.4.18 b

A. π B. $\frac{\pi}{2}$ C. $-\pi$

D. $\frac{\pi}{4}$ E. $-\frac{\pi}{2}$ F. None of these

5. Problem 5.4.20 a

A. $\frac{3\pi}{2}$ B. $\frac{\pi}{2}$ C. 0

D. $\frac{\pi}{4}$ E. π F. None of these

6. Problem 5.4.20 b

A. $\frac{\pi}{6}$ B. $\frac{5\pi}{6}$ C. $\frac{11\pi}{6}$

D. $-\frac{\pi}{3}$ E. $-\frac{\pi}{6}$ F. None of these

7. Problem 5.4.22 b

A. $\frac{11\pi}{6}$ B. $\frac{\pi}{6}$ C. $\frac{5\pi}{6}$

D. $-\frac{\pi}{6}$ E. $-\frac{7\pi}{6}$ F. None of these

8. Problem 5.4.26 a

A. Undefined B. $-\frac{\pi}{4}$ C. $\frac{3\pi}{4}$

D. $-\frac{3\pi}{4}$ E. $\frac{5\pi}{6}$ F. None of these

9. The range of $f(x) = sin^{-1}(x)$ is:

A. $[0,\pi]$ B. $(0,\infty)$ C. $(-\infty,\infty)$

D. $[-1,1]$ E. $\left[-\frac{\pi}{2},\frac{\pi}{2}\right]$

10. The range of $f(x) = tan^{-1}(x)$ is:

A. $[0,\pi]$ B. $[-1,1]$ C. $(-\infty,\infty)$

D. $\left(-\frac{\pi}{2},\frac{\pi}{2}\right)$ E. $(0,\infty)$

Choose the correct answer for each. Answers may be used more than once or not at all. Pay attention to the restricted domain and range.

11. $\sin^{-1}\left(\sin\left(\frac{\pi}{6}\right)\right) =$

12. $\sin^{-1}\left(\sin\left(\frac{5\pi}{6}\right)\right) =$

13. $\sin^{-1}\left(\sin\left(\frac{7\pi}{6}\right)\right) =$

14. $\sin^{-1}\left(\sin\left(\frac{11\pi}{6}\right)\right) =$

15. $\sin\left(\sin^{-1}\left(\frac{5\pi}{6}\right)\right) =$

A. $\frac{5\pi}{6}$

B. $\frac{\pi}{6}$

C. $-\frac{\pi}{6}$

D. $\frac{7\pi}{6}$

E. $\frac{11\pi}{6}$

F. undefined